

Message

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Subject: FW: Bloomberg Environment News: Largest Sources of Cancer-Causing Ethylene Oxide Go Unnoticed

<https://news.bloombergenvironment.com/environment-and-energy/largest-sources-of-cancer-causing-ethylene-oxide-go-unnoticed>

News

Largest Sources of Cancer-Causing Ethylene Oxide Go Unnoticed

- Illinois regulators shut down Sterigenics plant, passed new state law
- Texas and Louisiana, home to highest-emitting plants, are slower to act

Chemical plants in Louisiana and Texas release far more of the cancer-causing ethylene oxide gas than the Sterigenics medical sterilizer plant in Illinois, which snagged national headlines this year and was shut down by state regulators.

The Environmental Protection Agency decided in late 2016 that the gas is much more dangerous than previously thought—an assessment that industry groups and some state regulators dispute. A separate federal report found that emissions from the Sterigenics medical sterilizer plant in Willowbrook, Ill. could be harmful to public health.

The report sparked a local and national outcry that ultimately led the Illinois Environmental Protection Agency to shut down the Sterigenics plant in February, after further air quality testing, and led Illinois in June to pass the nation's toughest ethylene oxide laws.

But a Bloomberg Environment analysis of the U.S. EPA's air toxic emissions data shows that the top 10 ethylene oxide emitters in the nation were actually chemical plants in Louisiana and Texas. Dow Inc.'s sprawling 2,000-plus-acre Union Carbide Corp. petrochemical complex in Louisiana's St. Charles Parish topped the ranking, followed by Huntsman Corp.'s chemical plant in Port Neches, Texas, according to the 2014 data, the latest available.

In fact, the analysis showed the St. Charles chemical plant released more than five times as much ethylene oxide as the Sterigenics plant southwest of Chicago, and the Port Neches plant emitted nearly four times that quantity. The Illinois plant from Sterigenics, a unit of Sotera Health LLC, ranked 16th on the list.

But the chemical plants in Louisiana and Texas have not received the same sort of investigation or monitoring from either the states or the federal government, and lawmakers from those states appear unaware of the issue.

"EPA needs to do its job here, or they'll be leaving the residents of St. Charles Parish and other communities exposed to intolerable health risks," said Eric Schaeffer, executive director for the nonprofit Environmental Integrity Project.

Emissions from all the facilities on the EPA's list, including the Union Carbide, Huntsman, and Sterigenics plants, are within legal limits under complex Clean Air Act rules, which set different standards for facilities under different industrial classifications.

After determining the chemical is far more dangerous than previously thought, the EPA is now reconsidering emission limits for the two main industrial sources of ethylene oxide: commercial medical sterilizers and manufacturers of miscellaneous organic chemicals.

Some lawmakers and state regulators, especially those from Illinois, want the EPA to act faster. Sen. Tammy Duckworth (D-Ill.), who spearheaded the congressional campaign to push the EPA to update

standards for commercial sterilizers, said in an interview that she has asked EPA to monitor ethylene oxide monitoring at all plants, and to look at “updating the standards.”

Schaeffer, who worked in EPA’s enforcement office from 1990 to 2002, including as director of civil enforcement, said the current standards were based on research performed in the 1980s.

“EPA’s own research concluded in 2016 that ethylene oxide is far more dangerous than previously understood. Because EPA hasn’t updated its standards, people downwind are left to breathe potentially dangerous amounts of a chemical that increases the risk of cancer,” he said.

30 Times More Carcinogenic

Ethylene oxide is a flammable, colorless gas with a faintly sweet odor that is used to sterilize medical equipment, and also as a building block for other chemicals to make a range of products, including antifreeze, textiles, plastics, detergents, and adhesives.

The gas is found naturally in ambient air. But prolonged exposure to higher concentrations can hurt eyes and lungs, harm the brain and nervous system, and potentially cause lymphomas, leukemia, and breast cancer.

The EPA concluded in late 2016 that ethylene oxide is at least 30 times more carcinogenic than previously understood.

Facilities that release ethylene oxide are spread around the country, with many lower-emitting sites in states like Minnesota and North Carolina. But the 2014 data showed that those with the highest annual emissions were often concentrated further south; 12 of the top 20 highest-emitting facilities were in Louisiana and Texas.

In Illinois, the gas was detected as far as a mile away from the Sterigenics site in Willowbrook, though how far it can travel depends on complex dynamics involving weather, nearby hills, emissions quantity, smoke stack heights, and other factors.

Sterigenics’ facility is in the midst of residential areas and hotels, and across a road from a middle school, and the Huntsman facility in Louisiana is also close to a local high school and homes. Union Carbide’s plant in Texas is located across the Mississippi River from businesses and hotels.

Based in part on its own updated risk assessment, the EPA asked the Agency for Toxic Substances and Disease Registry, part of the Department of Health and Human Services, to study ethylene oxide emissions from Sterigenics in Willowbrook, Ill. The agency in August 2018 found that releases of the gas posed an “elevated cancer risk” to the residents and offsite workers in the community.

The report caused an outcry, and Illinois lawmakers and others in Congress called for more action and stricter national standards.

The Illinois Environmental Protection Agency shut down the Sterigenics plant in February, after further air quality testing by the U.S. Environmental Protection Agency showed releases of ethylene oxide more than doubled on certain days compared with earlier results. The company is now nearing a resolution with regulators that would allow it to reopen after agreeing to install

additional pollution controls to capture smokestack releases, plug leaks of fugitive emissions, and increase air quality monitoring.

The state also passed a stringent law requiring other, nonsterilization companies to develop plans to address ethylene oxide releases.

Current Standards ‘Protective’ For Texas

But the EPA’s latest National Air Toxics Assessment showed the cancer risk from ethylene oxide in Louisiana’s St. Charles Parish, location of the Union Carbide plant, is more than three times the cancer risk facing people near the Sterigenics facility in Illinois’ DuPage County. The cancer risk near Huntsman’s Port Neches plant is slightly lower than Sterigenics’, but still higher than the EPA’s safe level.

Yet regulators from Texas and Louisiana have been slow to act. The Texas Commission on Environmental Quality said the agency “believes the current standards are protective of human health and the environment.”

The Louisiana Department of Environmental Quality said it is working with the EPA to address concerns about ethylene oxide. At the same time, the agency is considering permits for Taiwan’s Formosa Plastics Corp. to build a \$9.4 billion plastics complex in St. James Parish, which would be allowed to release up to 7 tons of ethylene oxide a year.

Many residents oppose the “Sunshine Project,” which would be a mile from an elementary school. St. James Parish is bordered to the north by Ascension Parish, home to petrochemical plants owned by BASF Corp. and Shell Chemical, which were the fifth-highest and ninth-highest emitters of ethylene oxide in the nation. Shell Chemical is the petrochemicals arm of Royal Dutch Shell Plc.

Gregory Langley, spokesman for Louisiana’s environmental quality department, said the state’s regulators sent letters and met with some facilities permitted to emit ethylene oxide in the state, to ask them to develop strategies to lower their emissions and make sure they report emissions accurately. Langley added that “LDEQ is early in the process but will continue to work with EO emitting facilities and EPA to develop a path forward.”

Dow Inc., which owns Union Carbide and its facility in Louisiana, said its plants comply with current EPA regulations and that it is continuing to reduce ethylene oxide emissions as part of its sustainability goals.

“In fact, between 2014 and 2017, emissions at Union Carbide have decreased drastically, approximately 50%, due to improvements Dow has made at the site,” Ashley Mendoza, Dow spokeswoman, said in an email.

Huntsman Corp. also said its Texas facility is in compliance with all regulations, and it does air modeling of emissions to ensure any potential exposures are well-managed.

“We periodically perform fence-line monitoring, and the results indicate ethylene oxide levels at the fence line [or borders of a facility’s property line] are non-detectable,” Nancy Turner, a communications manager, said in an email. She said the company “can confirm that the safety of our associates and the communities in which we operate is our highest priority.”

Texas, Louisiana Lawmakers Appear Unaware

Lawmakers representing Louisiana and Texas have also not acted on the issue.

“I wasn’t aware of this information” about the levels of ethylene oxide around some Texas plants, Republican Sen. John Cornyn of Texas said in a brief interview. Fellow GOP Texas Sen. Ted Cruz declined to answer the question as he boarded the monorail inside the Capitol to his office in the Russell building.

“Send the question to my press office,” Cruz said. Queries to his office went unanswered.

Louisiana Sen. John Neely Kennedy (R) said he was committed to “clean air” but acknowledged he was unaware of the problem caused by ethylene oxide. And Louisiana’s senior senator, Bill Cassidy (R), did not respond to repeated requests for comment.

On the House side, Louisiana’s lone Democratic lawmaker, Rep. Cedric Richmond, whose district includes the Union Carbide plant, brushed off questions about ethylene oxide, saying he was rushing to the airport. His office did not respond to subsequent questions. Meanwhile, Texas Republican Rep. Randy Weber, whose district is home to the Port Neches plant, said he would have to do research on ethylene oxide concerns before responding.

Sen. John Barrasso (R-Wyo.), who heads the Senate Environment and Public Works Committee with oversight of the EPA, was unaware that ethylene oxide releases from chemical plants far exceeded those from commercial sterilizers.

“It hasn’t been brought to my attention by any of my members or the committee,” Barrasso said.

Michele Roberts, a national co-coordinator for the Environmental Justice Health Alliance for Chemical Policy Reform, a nonprofit advocacy group, said: “People have been talking about this in their communities. The local government knows about it, the state government knows about it and the federal lawmakers know about it,” Roberts said. “The government permits them to release billions of pounds of carcinogenic pollutants to occupy people’s air space and their land.”

No Rush to Revisit Chemical Plant Limits

The EPA must review toxic air emissions standards for various industries every eight years in light of new developments in technology and new information on risks. But the agency rarely meets this deadline.

The EPA said it is focused on revisiting limits for commercial sterilizer facilities, which were set in 1994 and last amended in 2001. The agency also said it is “currently focused” on reviewing ethylene oxides limits for manufacturers of miscellaneous organic chemicals, which were set in 2003 but haven’t been updated since 2006. The EPA is reviewing those limits under a court order, with results due by March 2020.

Yet neither rule has made it to the White House Office of Management and Budget for interagency review, usually the last step before public release.

Chemical plants like Union Carbide's operations in Louisiana are also regulated as manufacturers of synthetic organic chemicals. The EPA told Bloomberg Environment it has no immediate plans for revisiting limits for that sector, which have been unchanged since 1994.

In June, his last month in the post, former EPA air pollution chief Bill Wehrum met twice about the standards for commercial sterilizers, including one meeting with Sterigenics President Phil Macnabb, according to a copy of his calendar obtained through the Freedom of Information Act. None of his meetings mentioned ethylene oxide standards for other industrial categories.

Emma Cheuse, an attorney with the legal environmental nonprofit Earthjustice, said more air quality monitoring will prevent leaks and is something the EPA could easily require. She said petroleum refineries are the only facilities required to monitor air quality at the "fence lines," or edges of their facilities, and that requirement should be extended to all other industrial sites.

'Confusion and Alarm' Over Risk Assessment

The EPA hasn't decided how to revise its standards for ethylene oxide in light of the higher cancer risk assessment from 2016. It asked the public for comment, though the request was buried in an unrelated rulemaking on hydrochloric acid. Environmental groups worry the EPA may choose to disregard its own cancer risk assessment in setting ethylene oxide standards.

The American Chemistry Council believes the EPA overestimated the cancer risk, resulting in "unnecessary confusion and alarm within certain communities." In September 2018, the council petitioned the agency to change the risk value, saying its estimate for acceptable risk is in fact 19,000 times lower than the normal, naturally created levels of ethylene oxide in the human body.

Tom Flanagan, the council's director for production communications, said in an email that the group "strongly opposes" federal and state legislative efforts, including Illinois', based on what it called the EPA's "flawed" cancer risk value from ethylene oxide.

Texas appears to agree. The state said it wants to raise the acceptable threshold for exposure to ethylene oxide to 4 parts per billion, 1,000 times higher than the federal cancer risk. The Texas Commission on Environmental Quality said its own assessment demonstrated that "the EPA overestimated the cancer potency of ethylene oxide due to their use of an improperly validated, unconventional mathematical model to apply the findings from the highly-exposed occupational workers down to the low-level exposures experienced by the general public."

But Duckworth and other members of the Illinois congressional delegation, including Dick Durbin, the second highest ranking Democrat in the Senate, have instead urged the EPA to set stricter national standards "as soon as possible" for ethylene oxide from commercial sterilizers and miscellaneous organic chemical manufacturing plants.

"The EPA is taking too long to move forward with an action to protect communities surrounding ethylene oxide facilities," the delegation wrote on July 23.

The National Environmental Justice Advisory Council, which advises the EPA, has also raised concerns about unchecked ethylene oxide releases in communities, including those with predominantly people of color, in a May 2 letter to the EPA.

Inspector General Probe

Some lawmakers are getting frustrated with the slow pace.

Earlier in June, Duckworth and two other Democratic senators, Tom Carper (Del.) and Cory Booker (N.J.), asked the EPA Office of Inspector General to expand an existing probe into how the EPA uses its data to protect public health and the environment. They specifically cited the higher cancer risks from ethylene oxide for the Willowbrook community in Illinois, as well as for the community in St. Charles Parish, site of the Union Carbide plant.

The three senators, co-founders of the Senate Environmental Justice Caucus, noted that 21 of the top 45 emitting facilities are located within a three-mile radius of communities where the majority of the population is a minority.

“The facts are clear. Communities of color and low-income earners in Louisiana, Texas, West Virginia and other parts of Illinois are facing the same or greater threats of cancer as are the people in Willowbrook, Illinois,” said Cheuse, of Earthjustice. “EPA has to strengthen protections against toxic chemicals in these communities. These communities are calling on EPA to do its job.”

—With assistance from Jasmine Ye Han, Stephen Joyce, Paul Stinson, and Sylvia Carignan.